



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

August 15, 1997

MEMORANDUM

SUBJECT: Review of Thiophanate-Methyl Incident Reports
DP Barcode D230959, Chemical #102001, Reregistration
Case#2680

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BACKGROUND

The following data bases have been consulted for the poisoning incident data on the active ingredient Thiophanate-Methyl (PC Code: 102001):

1) OPP Incident Data System (IDS) - reports of incidents from various sources, including registrants, other federal and state health and environmental agencies and individual consumers, submitted to OPP since 1992. Reports submitted to the Incident Data System represent anecdotal reports or allegations only, unless otherwise stated. Typically no conclusions can be drawn

implicating the pesticide as a cause of any of the reported health effects. Nevertheless, sometimes with enough cases and/or enough documentation risk mitigation measures may be suggested.

2) Poison Control Centers - as the result of Data-Call-Ins issued in 1993, OPP received Poison Control Center data covering the years 1985 through 1992 for 28 organophosphate and carbamate chemicals. Most of the national Poison Control Centers (PCCs) participate in a national data collection system, the Toxic Exposure Surveillance System which obtains data from about 70 centers at hospitals and universities. PCCs provide telephone consultation for individuals and health care providers on suspected poisonings, involving drugs, household products, pesticides, etc.

3) California Department of Food and Agriculture (replaced by the Department of Pesticide Regulation in 1991) - California has collected uniform data on suspected pesticide poisonings since 1982. Physicians are required, by statute, to report to their local health officer all occurrences of illness suspected of being related to exposure to pesticides. The majority of the incidents involve workers. Information on exposure (worker activity), type of illness (systemic, eye, skin, eye/skin and respiratory), likelihood of a causal relationship, and number of days off work and in the hospital are provided.

4) National Pesticide Telecommunications Network (NPTN) - NPTN is a toll-free information service supported by OPP. A ranking of the top 200 active ingredients for which telephone calls were received during calendar years 1984-1991, inclusive has been prepared. The total number of calls was tabulated for the categories human incidents, animal incidents, calls for information, and others.

THIOPHANATE-METHYL REVIEW

I. Incident Data System

Please note that the following cases from the IDS do not have documentation confirming exposure or health effects unless otherwise noted.

A pesticide incident occurred in 1994, when a male was exposed to thiophanate-methyl that was sprayed on school playing fields. After the spraying, the wind blew the chemical towards his garden and exacerbated his emphysema. No further information on the disposition of the case was reported.

A pesticide incident occurred in 1994, when a woman was exposed to spray drift from thiophanate-methyl from an adjacent orchard. She experienced eye irritation. No further information

on the disposition of the case was reported.

II. Poison Control Center Data

Thiophanate-methyl was not one of 28 chemicals for which Poison Control Center data were requested.

III. California Data - 1982 through 1994

Detailed descriptions of 37 cases submitted to the California Pesticide Illness Surveillance Program (1982-1994) were reviewed. In 11 of these cases, thiophanate-methyl was used alone and was judged to be responsible for the health effects. Only cases with a definite, probable or possible relationship were reviewed. Thiophanate-methyl ranked 110th as a cause of systemic poisoning in California. Table 1 presents the types of illnesses reported by year. None of the cases reported in Table 1 were reported to have been hospitalized or had to take time off work as a result of their illness, although five cases were categorized as unknown in this respect.

Table 1: Cases Due to Thiophanate-Methyl Exposure in California Reported by Type of Illness and Year, 1982-1994

| Year | Illness Type | | | | | |
|-------|-----------------------|-----|------|---------|--------------------|-------|
| | ^b Systemic | Eye | Skin | Respir. | ^c Comb. | Total |
| 1982 | - | - | - | - | - | - |
| 1983 | - | - | - | - | - | - |
| 1984 | - | - | - | - | - | - |
| 1985 | - | - | 1 | - | - | 1 |
| 1986 | - | - | - | - | - | - |
| 1987 | - | - | - | - | - | - |
| 1988 | - | - | - | - | - | - |
| 1989 | 2 | - | - | - | - | 2 |
| 1990 | 3 | - | - | - | - | 3 |
| 1991 | | 2 | 1 | | 1 | 4 |
| 1992 | - | - | 1 | - | - | 1 |
| Total | 5 | 2 | 3 | - | 1 | 11 |

^b Category includes cases where skin, eye, or respiratory effects were also reported

^c Category includes eye/skin illness

A total of 5 persons had systemic illnesses that involved skin, eye, or respiratory effects or 45.5% of 11 persons. Three of these cases occurred in 1990 and the workers were diagnosed with chemical bronchitis. A total of 3 persons had skin illnesses or 27.3% of 11 persons. A variety of worker activities were associated with exposure to thiophanate-methyl as illustrated in Table 3 below.

Table 2: Illnesses by Activity Categories for Thiophanate-Methyl Exposure in California, 1982-1994

| Activity Category | Illness Category | | | | | |
|-------------------|-----------------------|-----|------|-------------|--------------------------|-------|
| | ^b Systemic | Eye | Skin | Respiratory | ^c Combination | Total |
| Applicator | 5 | - | 1 | - | 1 | 7 |
| Pack/Proc | - | - | 1 | - | - | 1 |
| Resifield | - | - | 1 | - | - | 1 |
| Resiother | - | 2 | - | - | - | 2 |
| Total | 5 | 2 | 3 | - | 1 | 11 |

^a Applicator = applicator; Pack/Proc = packing, processing, or retailing commodities; Resifield = field worker exposed to residue in the field; Resiother = worker exposed to residue neither agricultural nor structural

^b Category includes cases where skin, eye, or respiratory effects were also reported

^c Category includes eye/skin illness

According to the above activity categories, applicator and other spray/dust application methods that affected the systemic system were associated with the majority of the exposures. The majority of the systemic illnesses occurred due to a crew of workers sprinkling thiophanate-methyl from coffee cans onto seed potatoes that were cut. Symptoms included shortness of breath, chest pains, burning eyes, dizziness, and fatigue. According to the above resiother (worker exposed to residue neither agricultural nor structural) category, the two eye illnesses occurred due to the workers being exposed to residue from thiophanate-methyl that blew into their eyes. Symptoms experienced were eye irritation which included swollen and burning eyes.

IV. NPTN

On the list of the top 200 chemicals for which NPTN received calls from 1984-1991 inclusively, thiophanate-methyl was not reported to be involved in human incidents.

V. Summary/Conclusions

Relatively few incidents of illness have been reported due to thiophanate-methyl. However, careless application procedures (such as sprinkling powder from coffee cans) can result in respiratory illness with systemic poisoning.

VI. Recommendations

Goggles and dust masks should be considered for workers using powdered formulations. No other recommendations can be made based on the limited incident data available.

cc: Correspondence

Thiophanate-methyl file (chemical no. 102001)

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